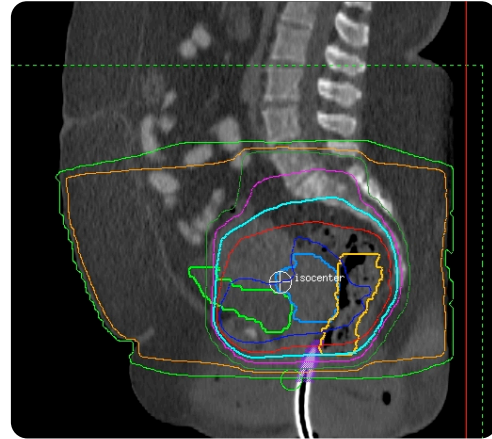


RADIATION THERAPY DATA SUBMISSION



Joye Roll, CMD
Jessica Lowenstein, MS
Geoffrey Ibbott, Ph.D.



1

ROLE OF THE RPC

- Funded since 1968 by NCI to assure that institutions participating in group studies are delivering comparable doses
 - Off-site Reviews
 - Patient Dosimetry
 - On-site Reviews
 - Research
 - Support
 - Outreach
 - Interaction with Study Groups



2



Office Hours:
8 A.M. to 5 P.M.
M-F Central time.
[Holidays](#)

Services
Forms
Publications
Brachy Sources
Research/TG-51
Upcoming Meetings

Monitored Institution Search

City Institution Name (wildcard = %)

State/Province or RTF Number

Zip Code

Country

USA
 CANADA
 Non-USA
 AUSTRALIA
 AUSTRIA
 BELGIUM
 CHINA
 INDIA
 ISRAEL
 ITALY
 JAPAN
 N/A
 NETHERLANDS
 NEW ZEALAND
 PERU
 PUERTO RICO
 REPUBLIC OF KOREA
 SAUDI ARABIA
 SERBIA
 SINGAPORE
 SOUTH AFRICA
 SPAIN
 SWEDEN
 SWITZERLAND
 TAIWAN
 TURKEY

Total number of distinct institutions: 1852 (1652 total active institutions monitored)
on Friday Jan 09, 2009 at 11:40 AM

> 1,600 RT facilities in 23 countries throughout the world,
including 45 EORTC members



3

RPC QA ACTIVITIES

- Presently monitoring 1,609 megavoltage therapy sites including Canada, Europe and Asia (There are ~ 2,400 RT sites in USA)
- ~14,000 photon and electron beams measured with TLD each year.
- Dosimetry review visits to:
 - ~50 institutions each year
 - ~500 megavoltage beams audited each year
 - Many brachytherapy sources audited each year



4

RPC: 713-745-8989

http://rpc.mdanderson.org



Home About us Newsletter **Credentialing** Institutions Monitored On-Site Audits FAQ Contact us Links Site map

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M-F Central time.
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Credentialing Open: [RTOG 0617](#) Phase III intergroup trial randomizing NSCLC patients to conventional RT versus high-dose conformal RT. Also: [RTOG 0618](#), [RTOG 0621](#), [RTOG 0622](#), [RTOG 0623](#), [RTOG 0630](#) and [GOG 0238](#) are ready for you to become credentialed.



Proton Therapy Questionnaire New requirement of all proton facilities participating on NCI sponsored clinical trials

New Phantom Requirements: The RPC has begun requiring electronic submissions of all phantom irradiations. [\[more\]](#)

NCI Guidelines: Click here for the latest NCI guidelines on the use of [protons](#) and [IMRT](#) in clinical trials.

RSNA - mini courses given by Geoffrey Ibbott and others at RSNA 2008



AAPM 2008 abstracts



Technical note: Heterogeneity dose calculation accuracy in IMRT: Study of five commercial treatment planning systems using an anthropomorphic thorax phantom
Scott E. Davidson, Richard A. Popple, Geoffrey S. Ibbott and David S. Followill



EORTC - Radiation Oncology Group Information on requesting TLD, fees, forms, and personnel [\[more\]](#)



Short Courses Physics courses related to therapeutic radiology offered at the University of Texas M. D. Anderson Cancer Center.



5

CREDENTIALING FOR GOG 0238

GOG 0238 Requirements

In order to complete the credentialing process the following items must be completed:

- Each Radiation Oncologist must complete and submit online a [Knowledge Assessment](#) to the RPC.
- Complete and submit an [IMRT Facility Questionnaire](#) to the Advanced Technology Consortium (ATC).
- A successful digital IMRT treatment planning data submission test to the [ATC](#).¹
- Irradiate the RPC's IMRT H&N or pelvic phantom.² Please fill in the phantom [request form](#) online. The "IMRT Benchmark" does not satisfy the credentialing requirements for this protocol.

Note:

¹ If you have previously submitted IMRT data to the ITC, you may not be required to repeat this step. If you have submitted digital data for other IMRT protocols you should fill in the [Credentialing Status Inquiry Form](#).

² Irradiation of the pelvic phantom satisfies part of the credentialing requirements for protocol 0238 but does not necessarily satisfy the IMRT phantom irradiation requirements for other protocols. Institutions that are credentialed to participate in other IMRT protocols requiring a phantom irradiation need not repeat the phantom irradiation for credentialing for this protocol. Institutions that are credentialed to participate in other IMRT protocols should fill in the [Credentialing Status Inquiry Form](#).



6

DATA SUBMISSION

- Cancer trials involving radiation often require that the details of radiotherapy be provided
- For GOG and several other groups, RPC recalculates the patient dose from data provided, and from our own data
- Data Managers are asked to collect and submit technical data
- Dosimetry data unlike much other data requested
- Includes treatment records, calculations, and images



7

WHAT TO SUBMIT?

Prescription (aka “treatment plan”)

Setup parameters

Daily treatment records

Dosimetry calculations

Isodose Plans

Images
(for accelerator treatments and brachytherapy)



8

- ◆ Setup
- ◆ Daily Record
- ◆ Dosimetry calculations

All calculations and supporting data required to set treatment time or “monitor units”



9

DAILY TREATMENT RECORD

Includes:

- Date
- Field
- MU given
- Dose given



10

DAILY TREATMENT RECORD

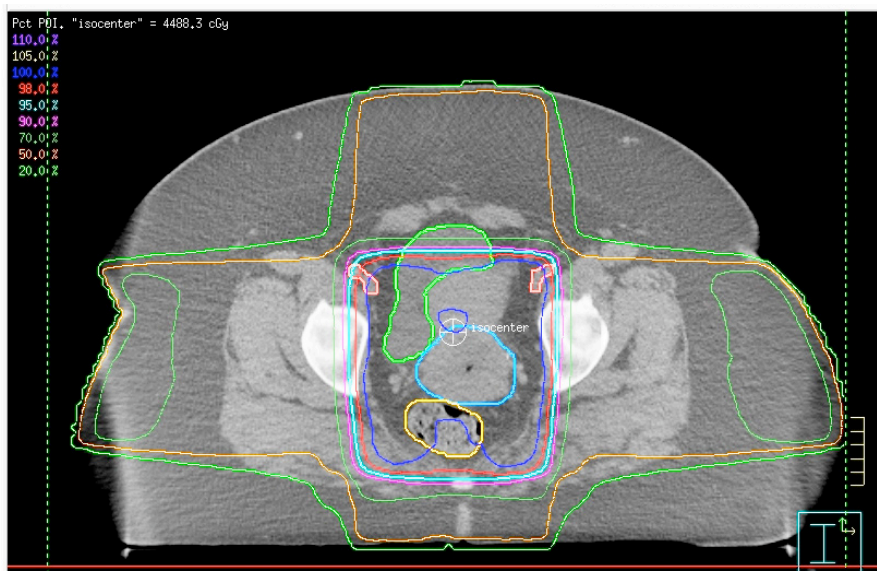
Includes:

- Date
- Field
- MU given
- Dose given

Date	Plan	Fractionation	Frac. No.	Sess. No.	Type	Field ID	Field Name	Override	Elap. Days	MU	Note	PELVIS TD
1/22/2007 3:11 PM	1-PELVIS	Fractionation1	1	1	PIMG	1.1.1-RT-LAT	RT LATERAL...		0	3		
1/22/2007 3:12 PM	1-PELVIS	Fractionation1	1	1	PIMG	1.1.1-RT-LAT	RT LATERAL...		0	3		
1/22/2007 3:13 PM	1-PELVIS	Fractionation1	1	1	PIMG	1.1.2-AP	AP PELVIS		0	3		
1/22/2007 3:14 PM	1-PELVIS	Fractionation1	1	1	PIMG	1.1.2-AP	AP PELVIS		0	3		
1/22/2007 3:15 PM	1-PELVIS	Fractionation1	1	1	TRT	1.1.2-AP	AP PELVIS		0	57	✓	51.9
1/22/2007 3:16 PM	1-PELVIS	Fractionation1	1	1	TRT	1.1.1-RT-LAT	RT LATERAL...		0	40		28.7
1/22/2007 3:16 PM	1-PELVIS	Fractionation1	1	1	TRT	1.1.3-LT-LAT	LT LATERAL...		0	41		29.5
1/22/2007 3:17 PM	1-PELVIS	Fractionation1	1	1	TRT	1.1.4-PA	PA PELVIS		0	72		68.8
1/23/2007 9:15 AM	1-PELVIS	Fractionation1	2	2	PIMG	1.1.2-AP	AP PELVIS		1	1		
1/23/2007 9:16 AM	1-PELVIS	Fractionation1	2	2	PIMG	1.1.1-RT-LAT	RT LATERAL...		1	3		
1/23/2007 9:16 AM	1-PELVIS	Fractionation1	2	2	TRT	1.1.1-RT-LAT	RT LATERAL...		1	40		28.7
1/23/2007 9:17 AM	1-PELVIS	Fractionation1	2	2	TRT	1.1.2-AP	AP PELVIS		1	57	✓	51.9
1/23/2007 9:18 AM	1-PELVIS	Fractionation1	2	2	TRT	1.1.3-LT-LAT	LT LATERAL...		1	41		29.5
1/23/2007 9:18 AM	1-PELVIS	Fractionation1	2	2	TRT	1.1.4-PA	PA PELVIS		1	72		68.8
1/24/2007 8:23 AM	1-PELVIS	Fractionation1	3	3	TRT	1.1.1-RT-LAT	RT LATERAL...		2	40		28.7
1/24/2007 8:24 AM	1-PELVIS	Fractionation1	3	3	TRT	1.1.2-AP	AP PELVIS		2	57	✓	51.9
1/24/2007 8:24 AM	1-PELVIS	Fractionation1	3	3	TRT	1.1.3-LT-LAT	LT LATERAL...		2	41		29.5
1/24/2007 8:25 AM	1-PELVIS	Fractionation1	3	3	TRT	1.1.4-PA	PA PELVIS		2	72		68.8
1/25/2007 9:24 AM	1-PELVIS	Fractionation1	4	4	TRT	1.1.1-RT-LAT	RT LATERAL...		3	40		28.7
1/25/2007 9:25 AM	1-PELVIS	Fractionation1	4	4	TRT	1.1.2-AP	AP PELVIS		3	57	✓	51.9
1/25/2007 9:26 AM	1-PELVIS	Fractionation1	4	4	TRT	1.1.3-LT-LAT	LT LATERAL...		3	41		29.5
1/25/2007 9:27 AM	1-PELVIS	Fractionation1	4	4	TRT	1.1.4-PA	PA PELVIS		3	72		68.8



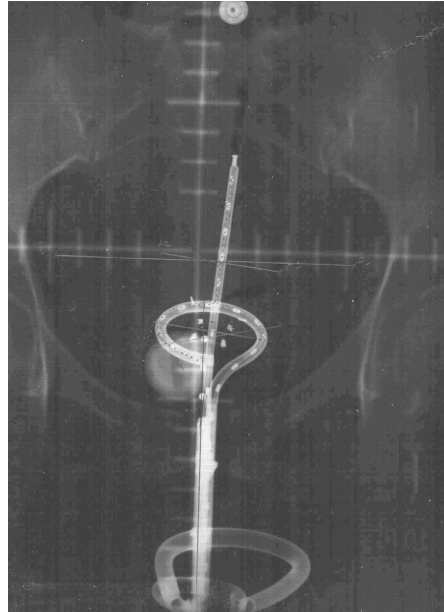
EXTERNAL-BEAM TREATMENT PLANS



BRACHYTHERAPY DATA

Images must show:

- Anatomy
- Bladder contr.
- Rectal markers
- Magnification
- Applicator
- Source dwell pos.
- Dwell times



BRACHYTHERAPY DATA

Must show:

- Anatomy
- Bladder contr.
- Rectal markers
- Magnification
- Applicator
- Source dwell pos.
- Dwell times



BrachyVision
Software version: Eclipse Brachytherapy planning 7.3.10
Varian Medical Systems

Plan Report for "Treatment #1"

Patient Name: [redacted] Source wire serial number: 51-2853
 Patient Sex: Unknown Source calibration date: 12/21/2002 12:00:00 AM
 Patient Birthdate: [redacted] Source calibrated activity: 10140.05 mCi
 Patient ID: 00003MVH Source half life: 73.83
 Treatment date: 3/17/2006 12:00:00 AM
 Total prescription: 600 cGy in 1 fractions Source treatment activity: 4329.61 mCi
 Dwell times are displayed for a single fraction. Total air kerma strength: 3956.88 cGy cm²
 Plan was created: 3/17/2006 10:20:35 AM Total Curie seconds: 3533.97
 Plan was saved: 3/17/2006 10:50:59 AM Total treatment time: 781.40 (s)

Applicator: RI Ovoid, Channel: 1, Source Model: Nu 16-192 Resdur, Treatment Strength: 18226.12 cGy cm² / h,
 Position [cm] 99.30 99.25 99.00 98.75 98.50 98.25
 Time [s] 4.0 13.3 22.4 23.4 19.0 46.3

Applicator: LI Ovoid, Channel: 2, Source Model: Nu 16-192 Resdur, Treatment Strength: 18226.12 cGy cm² / h,
 Position [cm] 99.30 99.25 99.00 98.75 98.50 98.25
 Time [s] 0.6 0.7 11.3 23.9 19.7 46.3

Applicator: Tandem, Channel: 3, Source Model: Nu 16-192 Resdur, Treatment Strength: 18226.12 cGy cm² / h,
 Position [cm] 99.30 99.25 99.00 98.75 98.50 98.25 97.75 97.50 97.25
 Time [s] 49.7 18.9 24.6 23.8 24.8 25.9 27.3 28.7 28.4 28.6
 Position [cm] 97.00 96.75 96.50 96.25 96.00 95.75 95.50 95.25 95.00 94.75
 Time [s] 27.3 25.7 24.5 23.4 23.2 22.9 21.0 24.2 20.8 21.6

Reference point:

	x [cm]	y [cm]	z [cm]	total.dose [cGy, 1 fraction(s)]
A - right	-2.75	0.07	14.75	3122.6
A - left	-7.69	-0.07	15.02	304.6
B - Right	-0.48	1.97	14.75	135
B - Left	-10.46	1.97	14.02	185
Post Bladder	-5.27	0.20	18.47	399.7
Rectum Inf	-9.81	4.82	16.82	403.9

No Radiograph Information

Geometrical Information

Points: RI Ovoid	x [cm]	y [cm]	z [cm]	(Dwell Position, 4.0 s)
	-4.30	3.09	17.00	(Dwell Position, 12.3 s)
	-4.32	2.96	17.21	(Dwell Position, 23.4 s)
	-4.33	2.82	17.42	(Dwell Position, 23.4 s)
	-4.35	2.69	17.64	(Dwell Position, 19.0 s)
	-4.37	2.56	17.85	(Dwell Position, 19.0 s)
	-4.38	2.47	18.08	(Dwell Position, 46.3 s)

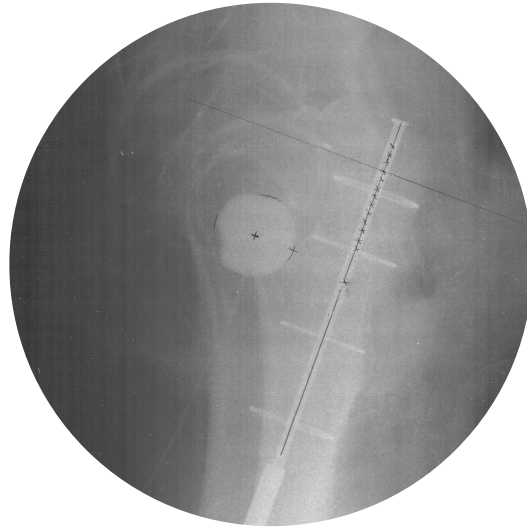
Handwritten notes: #1, 2.5 min, 3-17-06, Done, 3-17-06, 3-17-06, 3-17-06

Hospital Name: 3/17/2006 10:51:06 AM Page: 1/2

BRACHYTHERAPY DATA

Must show:

- Anatomy
 - Bladder contr.
 - Rectal markers
- Magnification
- Applicator
- Source dwell pos.
- Dwell times



BRACHYTHERAPY IMAGES

- ◆ Submit for all LDR insertions and HDR fractions
- ◆ If institution is filmless please provide all CT images on a CD to the RPC.



WHEN RPC REQUESTS DATA ...

It is because we really don't have it

If you think you've already sent it,
call us to be sure you know what we
want

We normally correspond with
physicist

We also copy data manager so you
know we're requesting data



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HOW TO SUBMIT ...

- ◆ Mail copies of chart, calculations, and films
- ◆ Mail originals of printed images and isodose plans
- ◆ Electronic images: use digital data submission to ITC for IMRT plans, CDs to RPC for brachytherapy



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DIGITAL DATA SUBMISSION

The screenshot shows the ATC (Advanced Technology Consortium) website. The header includes the ATC logo and navigation links: MEMBERS, CREDENTIALING, PROTOCOLS, PUBLICATIONS, RESOURCES, and HOME. The main content area features a prominent announcement: "PLEASE READ - Important Information for Protocol Participants Uploading Digital Data to ITC UPDATED (9/11/08)" and a link to "NCI Guidelines for the Use of Protons in Cooperative Group Trials". Below this is a collage of images related to radiation therapy, including a patient's head in a treatment mask, a CT scan, and a 3D model of a tumor. At the bottom of the page, logos for Image-Guided Adaptive Therapy Clinical Trials, RTOG (RADIATION THERAPY ONCOLOGY GROUP), QARC (Quality Assurance Review Center), and RPC are displayed.



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DIGITAL DATA SUBMISSION

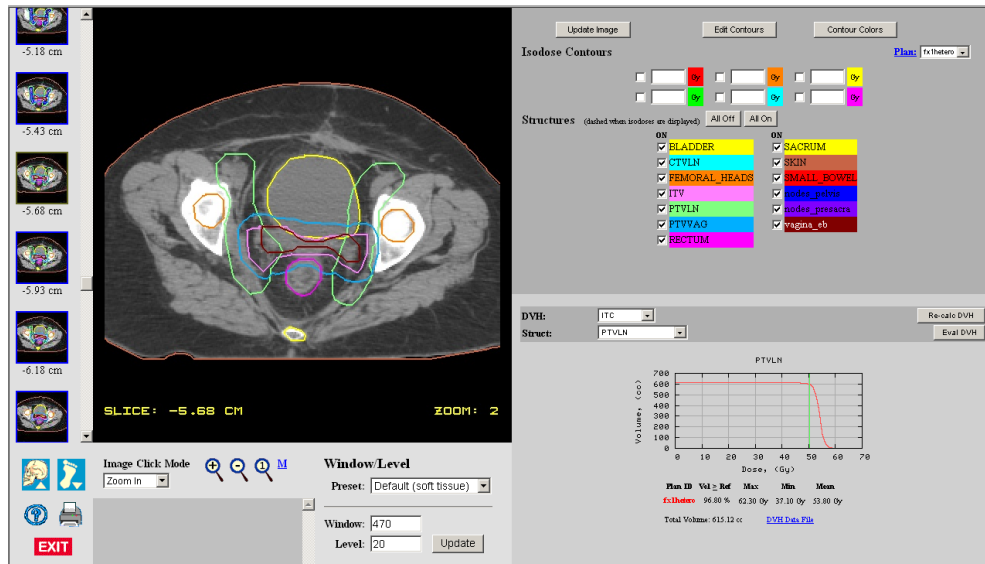
Requires:

- Setting up a SFTP account with ITC
- Electronically submitting all treatment planning data to the ITC via the SFTP or CD.
- Completing and submitting the Digital Data Submission Information (DDSI) Form.
- Submitting color isodose curves (used as a check in evaluating digital data) sent via email as a jpeg or snail mail.



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ITC REMOTE REVIEW TOOL



20

CONTACT US IF QUESTIONS!

- ◆ 713-745-8989
- ◆ <http://rpc.mdanderson.org>
- ◆ rpc@mdanderson.org
- ◆ Mailing address:

7515 Main St., Suite 300

Houston, TX 77030

- ◆ Look for this presentation on our web site



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